

## REMARKS

Entry of the foregoing and reconsideration of the application identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.111 and in light of the remarks which follow, are respectfully requested.

At the outset, Applicants and Applicants' representative thank Examiner Patterson of the U.S. Patent and Trademark Office for his time and consideration in participating in an interview with Applicants' representative on May 7, 2008. The Interview Summary accurately reflects the substance of the interview.

By the above amendments, independent claim 1 has been amended to delete the phrase "an amino acid comprising at least 9 carbon atoms, or a corresponding lactam." Thus, claim 1 now recites "(i) a polyamide thermoplastic copolymer obtained by copolymerization of  $\epsilon$ -caprolactam, and a mixture of hexamethylenediamine with a diacid comprising at least 9 carbon atoms, the ratio by weight between the  $\epsilon$ -caprolactam and the total amount of hexamethylenediamine and diacid being between 4 and 9."

In the Official Action, claims 1-3, 5-11, 19 and 21-25 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,164,445 (*Nishida et al*). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Independent claim 1 is directed to a tubular or pipe multilayer structure comprising at least one internal layer and an external layer. As discussed above, claim 1 has been amended to recite that at least the external layer is formed from a composition comprising as a polymer matrix a polyamide composition comprising a polyamide thermoplastic copolymer obtained by copolymerization of  $\epsilon$ -caprolactam, and a mixture of hexamethylenediamine with a diacid comprising at least 9 carbon atoms, the ratio by weight between the  $\epsilon$ -caprolactam and the total amount of hexamethylenediamine and diacid being between 4 and 9.

*Nishida et al* does not disclose or suggest each feature recited in independent claim 1. For example, *Nishida et al* does not disclose or suggest an external layer formed from a composition comprising as a polymer matrix a polyamide composition comprising a **polyamide thermoplastic copolymer obtained by copolymerization of  $\epsilon$ -caprolactam, and a mixture of hexamethylenediamine with a diacid comprising at least 9 carbon atoms**, as now recited in claim 1. In this regard, the Patent Office has relied on *Nishida et al* for disclosing the polyamide resins set forth at column 2, lines 4-11 thereof. However, none of such resins correspond to the claimed polyamide thermoplastic copolymer obtained by copolymerization of  $\epsilon$ -caprolactam, and a mixture of hexamethylenediamine with a diacid comprising at least 9 carbon atoms. Nor is there any disclosure or suggestion in *Nishida et al* that **the ratio by weight between the  $\epsilon$ -caprolactam and the total amount of hexamethylenediamine and diacid is between 4 and 9**, as recited in claim 1.

Applicants submit that employing a polyamide thermoplastic copolymer obtained by copolymerization of  $\epsilon$ -caprolactam, and a mixture of hexamethylenediamine with a diacid comprising at least 9 carbon atoms, in the formation of an external layer, and employing the ratio by weight between the  $\epsilon$ -caprolactam and the total amount of hexamethylenediamine and diacid of between 4 and 9, can result in a tubular or pipe multilayer structure having improved resistance to stress cracking, which is a significant problem affecting conventional pipes and tubes. *Nishida et al* has no recognition or suggestion of such advantages associated with employing the recited polyamide thermoplastic copolymer and ratio range in the formation of an external layer, let alone the specific polyamide thermoplastic copolymer now claimed in claim 1.

For at least the above reasons, it is apparent that the claims are not obvious over *Nishida et al*. Accordingly, withdrawal of the above rejection is respectfully requested.

Claims 12 and 14-18 stand rejected under 35 U.S.C. §103(a) as being obvious over *Nishida et al* in view of European Patent Document No. 0 646 627 (*Princiotta et al*). Claim 13 stands rejected under 35 U.S.C. §103(a) as being obvious over *Nishida et al* in view of U.S. Patent No. 5,357,030 (*VanBuskirk et al*). Claim 26 stands rejected under 35 U.S.C. §103(a) as being obvious over *Nishida et al* in view of U.S. Patent No. 4,881,576 (*Kitami et al*). Withdrawal of the above rejections is respectfully requested for at least the following reasons.

The deficiencies of *Nishida et al* are discussed above in connection with the obviousness rejection based solely on *Nishida et al*. The secondary applied documents fail to cure such deficiencies of *Nishida et al*. In this regard, the Patent Office has relied on *Princiotta et al* for disclosing the use of an acid-modified ultra low density polyethylene having specific characteristics. Official Action at page 4. *VanBuskirk et al* has been relied on for disclosing the addition of a chain extender to polyamide 6. Official Action at page 5. *Kitami et al* has been relied on for disclosing a gasoline hose having specific characteristics. Official Action at page 6. However, like *Nishida et al*, the secondary applied documents fail to disclose or suggest an external layer formed from a composition comprising as a polymer matrix a polyamide composition comprising a polyamide thermoplastic copolymer obtained by copolymerization of  $\epsilon$ -caprolactam, and a mixture of hexamethylenediamine with a diacid comprising at least 9 carbon atoms, as now recited in claim 1.

For at least the above reasons, it is apparent that independent claim 1 is not obvious over the applied art. Accordingly, withdrawal of the §103(a) rejections is respectfully requested.

From the foregoing, further and favorable action in the form of a Notice of Allowance believed to be next in order, and such action is earnestly solicited.

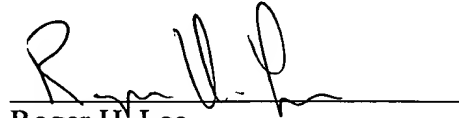
If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: June 16, 2008

By:

A handwritten signature in black ink, appearing to read "Roger H. Lee", is written over a horizontal line.

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